teaching ranks. Quality and sincerity in work and an endowment as a teacher are requirements. Obstetrics, gynecology, pediatrics, and neuro-psychiatry are the fields of teaching covered.

Two groups of women physicians deserve special words. The group who have added to the profession of wife and mother, an active life in the medical profession. It is no doubt a taxing combination and means a mentality that can evaluate and choose, and also an atmosphere at home, sympathetic to the effort. But that it *can* be done, the homes, children, and professional success of many women physicians in California go to prove.

The second group contains the devoted followers of general practice, the family doctors who follow the lives of the family groups from birth through childhood, adolescence, and maturity, and start out a new generation in turn. In this group most of the women physicians of the first four decades in California have functioned. As rural and urban physicians with a personal understanding and interest in the individual problems of their patients, they may in the future fill the demand as yet unanswered for the general practitioner.

No history of the development of women in medicine in California would be just or complete without a word of recognition and appreciation of the steady, helpful co-operation and sympathy given individually and collectively to women physicians by our brothers in the profession. At the time when women first applied and were excluded by the San Francisco County Medical Society and caricatured as "Carrie Nations" in the News Letter of that week, Dr. Samuel Morse, rising from a sick-bed, proposed, and Dr. Henry Gibbons Sr. endorsed, their names. Such men were heroes.

That year the women were admitted to the State Society, and the San Francisco County Society later admitted Dr. Lucy M. F. Wanzer, and thus the ice was broken.

The names of Dr. Samuel F. Morse, Dr. Henry Gibbons Sr., Dr. Henry Gibbons Jr., Dr. Levi C. Lane, Dr. Geo. Chismore, Dr. Chas. E. Blake, Dr. L. L. Dorr, Dr. Douglass Montgomery, Dr. Harry M. Sherman, Dr. John F. Morse, and Dr. C. A. Von Hoffman stand out as helpful friends of women in medicine at a time when it took courage to announce such a position. As consultants and members of the staff of the Children's Hospital, they gave support and endorsement to the work of women.

To the second fifty years of women in medicine in California is given the privilege of "carrying on." The profession has made marvelous advances; a college degree is today a prerequisite to the study of medicine with a very specific preliminary requirement as well. An internship is included in California before the degree Doctor of Medicine is granted.

The younger group begin where we leave off, but pioneer women physicians have set a marvelous standard in creative work and, in the spirit of service to suffering humanity, not easily surpassed. The early women physicians not only blazed a trail, but, well equipped educationally and in life experience, they made it a goodly highway easier of transit for every woman who follows, for their attainments.

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SOME CORRESPONDENCE RELATING TO THE INTRODUCTION OF VACCINATION INTO AMERICA

By WALTER C. ALVAREZ, M. D., *San Francisco*

SEVERAL years ago while rummaging in an old book store in New York I picked up, off of a pile of rubbish being swept up for the furnace, an old correspondence-box which had attracted my attention. On opening it, what was my delight to find a letter from Jenner dealing with one of the first shipments of vaccine to Benjamin Waterhouse in America; two long letters from Waterhouse in regard to this vaccine; a letter from Dr. Holyoke; lecture cards from three professors at Harvard Medical School in 1798-1801, and the diary and notes of a young medical student by the name of Matthias Spalding. This young man had been a student in Waterhouse's office and at Harvard, and had then gone to England for post-graduate study. Unfortunately for us, he was not much of a diarist and his entries too often are short and perfunctory and of the "Got up, washed and went to bed" variety. The one incident of the day which seems always to have interested him, judging by the fact that he seldom omitted reference to it, was—his dinner! Such as it is, however, it gives us interesting glimpses of the life of a medical student in the London of that time.

He arrived on May 18, 1801, and observed that "It was a noisy and disagreeable place." After a walk around the city, he could see that "The people looked and acted pretty much like other folks—all appeared to love money." The next day he "Dined with old Mr. Bainbridge and toasted the King, Queen and Royal family, Mr. Gray, George Long and Earl St. Vensen; had tea at 8 o'clock; then rose from the table and staggered home." Later he apparently did not feel so proud of this exploit, because we find "staggered" crossed out and "went" written above it!

On May 30 we find this *medical* student attending lectures on bleaching silk, on agriculture, the physiology of plants, astronomy, etc. On June 9 he writes: "Attended Mr. Garnett's lecture on the physiology of plants, but during the lecture attended more to the physiognomy of animals, for directly opposite me was a most beautiful young lady. She had an enchanting smile—her eyes sparkled like fire and I, or my eyes, could not help catching the flame. I was attentively engaged, but lost my lecture." Apparently his affections had not yet been put in cold storage, where Dr. Osler believed those of the medical student should be.

A good bit of medical psychology is found in his notes on a visit to the inoculating hospital in London. He says: "When inoculated, Woodville gave these children 5 gr. of Rhei and ordered 5 gr. more to be taken in about a week, *principally to quiet the parents.*" (Italics mine.) "He seldom tells the patient whether it be smallpox or cowpox, as many of them still have some prejudices respecting the matter."

After he had had a good look at the sights of London he made his pilgrimage to Cheltenham, where Jenner had him to dinner several times and

took him with him on his rounds to the poorhouse where patients were treated and vaccinated. Later he dined with Jenner a number of times in London. Unfortunately, he gives us none of his impressions concerning the great discoverer of vaccination, and the entries in the diary are all too brief.

In October, five months after his arrival, Spalding decided that he would settle down to work. He paid £20/0/0 for the privilege of being a "Surgeon's pupil," and for £11/10/0 more he did dressings under Mr. Cline. Sir Astley Cooper's courses in surgery cost him £6/6/0. His careful notes on these lectures show the remarkable absence of specialism in those days. Mr. Cline on one day removed a stone from the bladder and on the next, a cataract from the eye. The man who gave the course in midwifery lectured also on physiology. Spalding studied obstetrics, anatomy, surgery, chemistry, medicine and a little dentistry. His tuition for the year amounted to £77/0/0—a large sum in those days. Under the heading of amusements, he lists "Went to Bethlehem (since corrupted to Bedlam) near Moorfields to see the mad people." This cost him £0/3/6. Apparently there was a charge of £0/2/6 for every confinement he was allowed to attend.

In the correspondence-box, together with the numerous lecture cards, there was a large, neatly written manuscript report of Astley Cooper's lectures which cost him £1/12/0. Apparently, even in those days needy students made money by selling their notes to their less industrious fellows. Cooper begins his lectures with the statement that "Formerly a surgeon was only thought to require a lion's heart, an eagle's eye and a lady's hand, but he is now allowed to have some *brains.*"

A carefully kept cash account gives us a number of interesting sidelights. All doctors in those days carried a gold-headed cane and his, we find, cost £1/6/0. A "thermometier" cost £0/13/0, an inoculating lancet £0/1/6, etc. Surgical instruments were £20/0/0. At one time he was ill for sixteen days and his doctor's bill, including that for medicines, was £15/15/0. Apparently no allowance was made for his being a post-graduate student. Either he was somewhat of a dandy or else he laid in a goodly supply of "cloathes," because he paid his tailor £68/11/0 in a year and a half.

Before turning to a description of the letters found in the box it may be of interest to know that Matthias Spalding settled in Amherst, New Hampshire, where he became a successful practitioner. He had a good deal to do with popularizing the practice of vaccination in America, and in 1817 he was given an honorary degree of M. D. by Dartmouth College. There is a biographical sketch of Matthias on page 125 of "The Spalding Memorial" (Chicago Medical Publishing Association, 1897). He is mentioned approvingly by Oliver Wendell Holmes on page 108 of his "Prize Dissertation on Intermittent Fever" (Boston, 1838).

Having now been introduced to the original owner of the documents we can proceed to a discussion of the three most interesting letters. The two from Waterhouse are valuable because they show so clearly the difficulties which he encountered in keeping a proper supply of vaccine matter on hand in those days when it had to be obtained either on threads or from the pustules on the arms of the vaccinated. At times he even had to pay people to let him vaccinate their children so that he could keep the virus going. He was one of the organizers of Harvard Medical School and one of the most interesting characters in American medicine. The best biography of him which I have found is by W. M. Welch in the proceedings of the Philadelphia Medical Society (1885, vii, 172). He obtained much of his data from an article by Martin in the North Carolina Medical Journal for January, 1881. Perhaps the best insight into the character of the man can be obtained by reading his tracts on vaccination, letters from him published in Baron's Life of Jenner (London, 1888, vol. I, pp. 439, 473 and 593), and letters published in the biography of Lyman Spalding. Lyman belonged to another branch of the same Spalding family and was a resident pupil in Waterhouse's home a few years before Matthias was there.

We learn from these sources that after several unsuccessful attempts to obtain active virus from England, Waterhouse at last got some and vaccinated his children. His troubles then began. He was soon deluged with demands for virus and for information. From letters in the volume on Lyman Spalding we learn that he had difficulty in his efforts to make the thing pay. Many of those to whom he gave the virus neglected his instructions; got it contaminated with smallpox and other things and discredited the practice. Others tried to belittle him and to take all credit for themselves. As always, many denied the efficacy of the new treatment in spite of the very convincing experiments which were carried out in Europe and America. It should be noted, however, that the more intelligent physicians and laymen almost immediately accepted these proofs and helped in the dissemination of the practice. As Waterhouse wrote to Jenner (Baron, vol. I, p. 473): "The characters in America most distinguished for wisdom and goodness are firm believers in your doctrine. They are not, however, overforward in assisting me against this new irruption of the Goths —. At present they leave me too much alone and it is probable will only come openly to my assistance when I do not want them. Had I not a kind of Apostolic zeal, I should at times feel a little discouraged. The natives of America are skilled in bush-fighting."

The jealousy and opposition of his medical brethren; the distrust that the layman feels for an innovating physician (never for an innovating quack); his own preoccupation with a large correspondence and his research on vaccination soon left him without patients and in actual want. Dabbling in politics added to the number of his enemies, and in 1812 he was forced to resign his position at Harvard. In many ways he undoubtedly was one of the big men in American medicine, but he seems to have been rather pugnacious and tactless, and many of his troubles were probably brought upon him by himself. According to Baron (vol. I, p. 442) the idea of obtaining virus from vaccinated cows was original with him.

Following are the two letters which were both directed to Spalding in London:

"Cambridge, Oct. 20th, 1801.

Dear Sir:—

I rec'd your letter by the Galen together with the

spectacles, glass, etc., and was very well pleased with them, and hereby return you my thanks for executing your commission so much to my entire satisfaction.

I was gratified at hearing of the polite attention of Dr. Lettsom to you, and I rejoice as often as I call to mind the fortunate incidents that have combined to place you in the high road of improvement you are now in. You will learn more in one week in London, than in America during twenty.

Your second letter was from Cheltenham, where altho it carries you from the lectures must nevertheless be improving to you. A prudent man can draw instruction from every place. The conversation of learned, polished and agreeable men is more valuable than books. They are the *'living manners'* and are always useful. Air, earth and the congregation of men are the pages for a young physician to study, and as there is scarce any book out of which something useful may not be drawn, so there is no situation from which something may not be learnt. I presume you will spend the winter in London, if so, you can attend the anatomical and chemical lectures to advantage. I was pleased to hear that you had conversed with the man I so much admire, I mean Jenner. Present my best regards to him and tell him that although I sought his life with eagerness, and failed in the attempt,[1] I have nevertheless (instigated by the same spirit) been a little consoled in *hanging him up, in effigy,* in my parlour.

Aspinwall,[2] whose candor and liberality was all affectation, has shown his teeth this summer and has injured the new inoculation by inoculating those *whom he knew had never gone fairly through the disease,* and advertizing the result in the newspapers. It was just his harvest time, it staggered several who were balancing between the S. pox and kine pox, and occasioned perhaps 20 or 30 to go into his hospital. He gives out that the K. pox will preserve from infection for a few months *but no longer.* Lest this insidious conduct should make a gap in our inoculation, and lest that should break the continuity of the matter, I have to request you earnestly to send me some more vaccine matter by the Galen and the Minerva, or any, or every opportunity. No one in this quarter is now inoculating but myself, and I fear lest being thus alone I should be divested of the virus. Of all modes, I prefer that on cotton thread, well and repeatedly soaked in the 8th day virus. Mr. Wachsal sometimes sends it from cases on the 10th, 12th and 13th days, but I am doubtful of all taken after the efflorescence has formed. I pin my faith on Jenner and his rules. He is *my* polar star. He is the only unconfused writer I have yet met with on the Variola vaccinae.

The circle of your friends is, I believe, as entire as when you left us. Our season has been fine, and it is not unhealthy. The malignant fever (probably yellow fever, WCA) has again appeared at N. York and in Maryland, but milder and later in the season. Did you see Dr. Haygarth at Bath? If so, did you get introduced to him personally?

Capt. Barrow paid half of his note. J. Bartlett, the whole of his. Scales, nothing. Mrs. Waterhouse is obliged to pester you with a little frivolous commission. To procure for her at what is called a Turnbridge-ware house, or Turner's shop in London four setts of *Butter stamps* with rims, to them. They are for the purpose of making the round stamps of butter for the breakfast table, being such as Major Brattle used to have at his table. Each sett may cost a shilling or eighteen pence. She wishes to have the four setts of four different sizes. As to the figure of the stamps, be sure to get the *prettiest.* This turned work is made at Tunbridge and sold in every street in London. Mrs. W. and the children desire their best regards; so do my mother and sister; and so do Mr. and Mrs. Mellen, and the young ladies. Did you ever hear Mr. Mawman say anything of a manuscript he is about publishing of mine? Has Dr. Lettsom published his Eulogy on the Cow-pox? Anything you wish to send will be taken good care of by Capt. Hinkley of the Galen or Capt. Barber of the Minerva. The stamps may be sent by either; but if you wish to send a single letter, or indeed a packet, you have only to get some acquaintance to transmit it to Liverpool, where there is almost always a ship up for Boston. Not a week but that you may send that way. I will send a few of my pamphlets to Dr. Jenner by the Galen or Minerva. They sail in ten days.

BENJAMIN WATERHOUSE."

"Cambridge, April 15, 1802.

Dear Sir:

I received your letter of Feb. 2nd with great satisfaction, and lest you should not receive from your relations any letter, I thought you would not *'begrudge'* a shilling to have a letter via Liverpool, if it announced the continued welfare of your friends and relations. I saw Mr. Packard lately and also Gen'l Bridge, and have had several kind enquiries after you from Deacon Morris.

You mentioned having sent me some vaccine matter by the Galen, but I could find no letter or packet on board her. She brought me no letter from any of my London correspondents, which was rather a disappointment. By the Minerva I received one from Dr. Jenner, and have in return sent him an account[3] of the diffusion of the blessings of his discovery among the tribes of Indians by the immediate agency of President Jefferson.

A grand embassy of warriors were at Washington last winter when the President explained to them the precious donation which the great spirit had lately made the enlightened white man. He then caused all the warriors to be inoculated for the Kine pock and when they departed had the *matter,* with an abstract of the directions I had given to him, put into the hands of the interpreter, and told them that they would not only be secured by it from the S. pox, but that it would finally extirpate that disease from the earth. I have sent the anecdote to Dr. Jenner, and which I hope will reach Mr. Ring. I am inexpressibly disappointed in not receiving a continuation of his treatise. I wish to see it before I publish mine.

The measles are diffused through the whole country and I fear that we shall all lose our vaccine matter by it, because, some are under it, some just got over it and others expecting of it. On that account I have to request my friends in London to favor us with some of the virus by the different ships. I am indeed very apprehensive that we shall lose the matter from that cause. I hope Mr. R. will not name Aspinwall in terms that may hurt his feelings. I have many apologies to make for him. There are hundreds worse than he is in the opposition. His hospital is his own property and he will lose 1500 guineas a year by it.

Mrs. W. thanks you very cordially for the butter stamps. You have done so well in it that she is encouraged to employ you again. She wishes for three or four of *4 inches diameter,* that is 2 circular ones—and 2 oval ones, or as she expresses it stamps that will hold a ¼ lb. of butter. Those you have sent are very pretty and much admired. Are there any stamped with the spread eagle of America? Make a minute of these little expenses for me in your pocket book. The children desire their love to you. John made him a long lash whip the other day and I overheard him say in the intervals of snapping it, 'I will write down the day of the month and hour when I snap'd it, and ask Mr. Spalding if he did not hear it crack all the way to London!' Daniel says you must send him a young elephant, Benjamin wants one of the lions out of the tower, or if you can't easily get one of them you may send him, he says, a crocodile.

Adieu, your friend,

BENJAMIN WATERHOUSE.

P. S.—Geo. Stroud has a majority of votes over Gerry of *ten thousand.* I am glad to hear by you that Mr. Mawman is about putting my manuscript to press. By this opportunity I have sent a letter or dissertation on Natl. History, or rather *a sketch of my course of lectures* to be inserted in that volume. I would thank you on receipt of this to say as much to Mr. M. without saying that I desired you to, for I have addressed the letter to Dr. Lettsom who may thro hurry of business omit to

1 This playful passage is explained in a letter from Waterhouse to Jenner, to be found in the former's tract on vaccination published in 1810, p. 52. He wanted material for a short sketch of Jenner's life.

2 Aspinwall ran a smallpox inoculation hospital in Boston, and naturally faced ruin if vaccination should prevail. In the next letter we see how charitable Waterhouse was towards him in the matter. Jenner had exactly similar difficulties with Woodville, the head of the smallpox hospital in London.

3 An almost identical account of this event is to be found in a letter Waterhouse wrote Jenner, April 8, 1802 (Baron, 1888, i, p. 593).

attend to it. It is additions, etc., to what I wrote four years ago.

If you understand me, my meaning is this, I wish you to mention to Mr. M. in a casual way that you find by a letter from me that I have sent an additional letter for that work in which case he will enquire for it of Dr. L., should Dr. L. through hurry, have neglected it."

The following letter from Jenner to Spalding explains itself. As I have said before, it deals with one of the earliest shipments of vaccine to America:

"Dear Sir:

From the time I rec'd your communication relative to the sailing of the ship to America, to the present hour, I have met with such incessant interruptions that I c'd not get my parcel ready for Dr. Waterhouse till now.

I have written a long letter, or rather a long incongruous scrawl—the Dr. perhaps little knows the harassing kind of life I lead here—I wish you w'd in some measure explain it to him that it may prove an apology for my incoherent letter. I have sent some Vac. matter to the Dr. Perhaps you made the request for yourself. If so, pray let me know it.

Yours very faithfully,

E. JENNER.

Tuesday night."

The pressure under which Jenner carried on his correspondence is well shown in another letter of his to Waterhouse, which is published in the latter's "Information, etc." (Cambridge, 1810, p. 52). There he says: "And now, my good doctor, I would fain proceed further and double my epistolary account with you; but our friend Spalding tells me that if I do not make haste, the ship intended to convey this will be gone. I have not said half I wish to say—but I am at this moment fifty letters behindhand with my correspondence—a distressing idea." If only he could have had a stenographer and a typewriter!

We know from Baron (p. 386) that this correspondence between Waterhouse and Jenner was kept up with increasing interest and attachment until nearly the close of Jenner's life. Such friendships between scientific workers who have never met are beautiful and, I believe, represent humanity at its best.

177 Post Street.

Why Worry?—"Worry," says Herman N. Bundesen, "is a waste of time and energy, accomplishes nothing, and gets nowhere. Worry creates a surly temper and an habitual grouch. It puts a damper upon ambition and is a wet blanket upon happiness. It's a 'joy-killer.' Worry gives a jaundiced look on things, disturbs mental balance, and lowers resistance to disease. The life of the worrier is just what he makes it—an unbalanced existence. The remedy for worry is cheerfulness, and this is to be found in planning good things for the future, living more contentedly in the present and not at all in the past, having more faith in God, talking less, listening more, keeping occupied, and cultivating optimism. Look at the doughnut, not the hole."

Reorganization Meeting of the State Medical Society of California, October 19, 1870—It was for such purposes this society was formed: To bring the members into harmonious unity of action; to cause mind to bear on mind; to work out the problem of climatic influences on the physical condition of man; to investigate the nature and causes of endemics and epidemics; to determine the best methods of holding life and health in integrity, and to remedy the evils incident to existence—these I conceive to be its prominent aims. (From Address of Welcome delivered by Thomas M. Logan.)

SOME HISTORICAL INCIDENTS IN THE DEVELOPMENT OF THE OPERATION FOR CATARACT

By HANS BARKAN, *San Francisco*

IN OUR attempt to describe and bring forth the relation to each other of the main developments of the operation for cataract, we find that we are asked to include a period of two thousand and more years. The development of the operation to its present very nearly perfect state was dependent upon the natural development of knowledge during the course of this period, partly upon the development of certain specialized forms of learning, and partly upon emancipation from prejudice and bigotry.

The literature on the subject is immense, though comparatively little is extant in the *original* Latin or Greek. These writings disappeared long before the time of the Arabians. With the pillage and sacking of cities and the destruction of their libraries, many of the original descriptions of the operation vanished, and it is mainly through the translations into the Arabian that we are still able to obtain very nearly first-hand knowledge of what the ideas of the Romans and Greeks were.

In our appreciation of operating methods and of general knowledge appertaining to cataract among the Greeks and Romans, we must not forget that translations into the Arabian were not always accurate and were often not from the original Latin, but from various forms of degenerate and colloquial Latin. Furthermore, that the Arabians interpolated their own conceptions of what the original Roman or Greek surgeon may have meant, and that often an Arabian word meaning one thing may have had in the Latin original one of several meanings, and vice versa, so that the translations which we possess of the Arabian manuscripts, English, French or German, give in many cases a different meaning from that which the original Latin or Greek description meant to convey.

A case in point is the question as to whether the Greeks and Romans ever suspected the true nature of cataract. What did they mean by the removal of a cataract? Was not to them any obstruction to sight that was visible within the anterior chamber or within the pupil a cataract? Did they not include hypopion and secondary pupillary membrane? We wonder whether some of the very earliest accounts of the actual removal of the lens from the eye do not refer to an incision into the cornea for removal of a hypopion.

Galen says: "The cataract is brought to another location where it disturbs less, but a few have attempted to empty it entirely." The original of this work is lost, as is the work of Antyllos, which Razi has preserved for us in Arabian and in which it is stated, "I have split the lower part of the pupil and have led the cataract outward. This is possible with the thin cataract, but with the thick it is not possible because the egg jelly moisture would flow out with the cataract."

Hirshberg, who has gone most carefully over the Arabian text, with which language he was familiar, doubts that the leading out or pulling out of the cataract is the sense of the word, but that it is more